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DIFFERENTIAL IMPACT OF RENAL SYMPATHETIC DENERVATION ON INDEXES OF SHORT-TERM BLOOD PRESSURE VARIABILITY IN PATIENTS WITH RESISTANT HYPERTENSION

Poster Contributions
Hall C
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Background: Transluminal renal sympathetic denervation (RDN) reduces blood pressure (BP) in patients with drug resistant hypertension (RHTN). We assessed the effect of RDN on indexes of short-term blood pressure variability (BPV) in patients with drug RHTN.

Methods: In the EnligHTN I study, patients with drug-RHTN underwent office and ambulatory BP measurements (ABPM) at baseline and 6 months after RDN using the multi-electrode EnligHTN ablation catheter (St. Jude Medical, USA).We analyzed BP data for 31 patients (office BP 178.3/94.3 mmHg, 24-hour BP 147.5/81.2 mmHg).For each patient the standard deviation (SD) was recorded of all systolic and diastolic BPduring24-hour, daytime and nighttime and weighted 24-hour BP SD. Average real variability (ARV) of 24-hour systolic and diastolic BP and the time rate of systolic and diastolic BP variation defined as the first derivative of the BP values against time.

Results: There was a significant reduction in 24-hour BP by 10.2/6 mmHg, ($p<0.001$ for both SBP and DBP) and in maximum values of systolic and diastolic BP from 185/106.5 to 170.8/97.7 mmHg ($p<0.001/0.001$ respectively) 6 months post RDN. There were no significant changes in SDs of 24-hour systolic and diastolic BP(from 15.9/10.5 to 15.9/10.8 mmHg), as well as in the daytime and nighttime SDs (p=NS for all). There was no difference in the weighted SD of 24-hour systolic and diastolic BP (from 13.7/9.2 to 13.5/9.2 mmHg), which adjusts the SD for the nocturnal BP fall. Additionally, ARV of 24-hour systolic and diastolic BP remained practically unchanged (from 10.1/7.4 to 10.3/7.5 mmHg). In contrast, the rates of systolic and diastolic 24-hour BP variation were significantly decreased (from 0.40/0.30 to 0.34/0.24, p=0.030/0.006.Similarly, a significant variation was observed in the daytime and nighttime rates of systolic and diastolic variation after RDN.

Conclusion: RDN exerts a differential impact on short-term BPV indexes, as assessed by ABPM, in patients with drug RHTN. Specifically, while conventional BPV indexes seem to be practically unaffected after RDN, a significant decrease in the rate of BP variation is observed 6 months after RDN.